

CLAIMS:

1. A method for monitoring performance of at least one machine operator,
said method including the steps of:
5 measuring at least one machine parameter during operation of the
 machine by the operator;
 generating at least one performance indicator distribution from
 measurements of the at least one machine parameter; and,
 calculating at least one performance indicator from the at least one
10 performance indicator distribution.
2. The method of claim 1, further including the step of providing feedback to
the operator by displaying the at least one performance indicator in
substantially real-time to the operator.
- 15 3. The method of claim 1, further including the step of providing feedback to
the operator by displaying the at least one performance indicator to the
operator once the machine has completed an operation cycle.
- 20 4. The method of claim 1, wherein the at least one machine parameter is a
dependent machine parameter.
5. The method of claim 1, wherein the at least one machine parameter is
the sole parameter represented by a particular performance indicator.
- 25 6. The method of claim 4, further including the step of segmenting at least
one of the dependent machine parameters into segments, the range of
each segment constituting a segmentation resolution.
- 30 7. The method of claim 6, wherein the step of segmenting at least one of
the dependent machine parameters includes specifying a magnitude of
the range for each segment of each dependent machine parameter
requiring segmentation.

BEST AVAILABLE COPY

8. The method of claim 4, wherein at least one dependent machine parameter does not require segmentation.
- 5 9. The method of claim 1, wherein the step of generating the at least one performance indicator distribution includes using a mixture of one or more distributions to model the performance indicator distribution.
- 10 10. The method of claim 9, wherein the number of mixtures is set dynamically.
11. The method of claim 1, wherein the at least one performance indicator distribution is generated using an algorithm.
- 15 12. The method of claim 11, wherein the algorithm is a Linde-Buzo-Gray (LBG) algorithm.
13. The method of claim 1, wherein the at least one performance indicator distribution is generated using a linear ranking model (LRM).
- 20 14. The method of claim 1, wherein two or more performance indicators are combined to yield an overall performance rating of the machine operator.
- 25 15. The method of claim 14, wherein one or more of the performance indicators are positively or negatively weighted with respect to the other performance indicator(s).
- 30 16. A system for monitoring performance of at least one machine operator, said system comprising:
at least one measuring device for measuring at least one machine parameter during operation of the machine by the operator;
a server for generating at least one performance indicator distribution from measurements of the at least one machine parameter; and,

a performance indicator calculation module for calculating at least one performance indicator from the at least one performance indicator distribution.

- 5 17. The system of claim 16, wherein the server is remote from the machine.
- 10 18. The system of claim 16, wherein the server comprises:
storage means;
communication means; and
a performance indicator distribution calculation module.
- 15 19. The system of claim 16, wherein the performance indicator calculation module is onboard the machine.
- 20 20. The system of claim 16, wherein the performance indicator calculation module is coupled to communication means for transmitting and receiving data to and from the server.
21. The system of claim 16, further comprising at least one display device.
22. The system of claim 21, wherein the at least one display device displays the at least one performance indicator in substantially real-time to the operator.
- 25 23. The system of claim 21, wherein the at least one display device displays the at least one performance indicator to the operator once the machine has completed an operation cycle.
- 30 24. The system of claim 21, wherein the at least one display device is onboard the machine.
25. The system of claim 21, wherein the at least one display device is

remote from the machine.